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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,316

07/26/2006

Souichi Iwasa

AI-423NP

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23995

7590

11/10/2010

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EXAMINER

BOEHLER, ANNE MARIE M

ART UNIT

PAPER NUMBER

3611

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,316	Applicant(s) IWASA ET AL.	
	Examiner Anne Marie M. Boehler	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3611

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboi (PGP 2001/0035310) in view of JA 2003-13989.

Tsuboi shows a power steering system 10 with a steering electric motor 130 having an output shaft 31, a speed reduction mechanism 35, 36, with an input shaft 32, and a power transmission joint 44 that couples the input and output shafts. The joint includes a first annular engagement member 41b, a second annular engagement member 42b, and an elastic member 40 with an annular main body and engagement arms between the members. Power transmission faces of the engagement arms engage engagement projections on the engagement members.

Tsuboi fails to specifically disclose differences in the size of engagement surfaces or differences in thickness or spacing of the engagement arms or projections. However, mechanical systems are not perfectly manufactured and will include differences among parts, even those designed to be essentially the same in configuration. Also, JA 2003-013989 shows an elastomeric member 17 in a power transmission joint that includes an annular main body 17b with projecting arms 17a and opposite faces of the arms have different engagement surfaces. Therefore, it would have been obvious to one of ordinary skill in the art to manufacture the engagement arms and projections of the Tsuboi device with differences in surface configuration, as

Art Unit: 3611

taught by JA 2003-013989, in order to provide progressive resistance to movement in between the shafts. It would also have been obvious to provide differences in thickness, and angular spacing, in order to avoid unnecessary difficulty and expense in manufacturing.

3. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboi and JA 2003-13989 as applied to claims 1-5, 8, and 9 above, and further in view of Byrom (USPN 2,135,634).

Tsuboi fails to teach cam surfaces on the engagement projections and the engagement arms.

Byrom teaches providing cam surfaces (curvature of the edges of the projections 14 and radial arms 20, as described in col2, lines 20-23), that can cause compression of the elastic member during axial movement of the engagement members.

It would have been obvious to one of ordinary skill in the art to provide the Tsuboi joint with cam surfaces on the engagement arms and engagement projections, as taught by Byron, in order to minimize friction and wear when the elastic member runs out of alignment.

4. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboi in view of Ricefield (USPN 2,034,001).

Tsuboi shows a power steering system 10 with a steering electric motor 130 having an output shaft 31, a speed reduction mechanism 35, 36, with an input shaft 32, and a power transmission joint 44 that couples the input and output shafts. The joint includes a first annular engagement member 41b, a second annular engagement

Art Unit: 3611

member 42b, and an elastic member 40 with an annular main body and engagement arms between the members. Power transmission faces of the engagement arms engage engagement projections on the engagement members.

Tsuboi fails to show the engagement arms increasing in width from the first face to the second face.

Ricefield shows a coupling including a first annular engagement member 45 with a first plurality of projections 45a, a second annular engagement member 46 with a plurality of projections 46a, and an elastic member 50 with first and second faces connected to the first and second engagement members, and a plurality of engagement arms 50a extending radially into engagement with the engagement members. Each arm of the elastic member increases in width from the first face 45c to the second face 46c (as clearly seen in Figure 1).

It would have been obvious to one of ordinary skill in the art to provide tapered engagement arms on the elastic member of Tsuboi, as taught by Ricefield, in order to provide free movement between the shafts while restraining the elastic member against endwise movement with respect to one coupling member.

5. Applicant's arguments filed 8/23/2010 have been fully considered but they are not persuasive.

Applicant has provided a Declaration under 37 CFR 1.132. The Declaration asserts that certain benefits arise from providing specific interference fits on opposite sides of projections from applicant's elastic member. This, applicant asserts, has resulted in the commercial success of applicant's product. Applicant's remarks indicate

Art Unit: 3611

that the exemplary interference fits noted in the Declaration are significantly larger than the machining tolerance and, therefore, the prior art does not teach differences in interference in the sense applicant means to claim. However, applicant has not claimed these specific tolerances. Applicant does not even disclose the exemplary interferences discussed in the Declaration, or any specific interferences for that matter. Therefore, the examiner does not agree that the differences in interferences claimed are outside of machine tolerances. Applicant has also simply stated that the prior art to Yukata fails to overcome the deficiencies of Tsuboi, without any support or rationale for that statement. Yukata, at least, shows a difference in contact configuration between the opposite sides of each engagement arm of the elastic member. The examiner maintains that this difference in contact surface provides a difference in interference fit, as with applicant's invention. Therefore, the rejection is being maintained.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3611

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne Marie M. Boehler whose telephone number is 571-272-6641. The examiner can normally be reached on 7:30-5:00, Monday-Thursday, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 571-272-6641. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anne Marie M. Boehler/
Primary Examiner, Art Unit 3611

Anne Marie M. Boehler
Primary Examiner
Art Unit 3611

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